IMPERIAL BUREAU
OF
AGRICULTURAL PARASITOLOGY
(HELMINTHOLOGY)

VOLUME 1. Part 8. Pp. 161–192. 26th JUNE 1946

THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The Official Organ of

THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

Edited by

FRANCIS HEMMING, C.M.G., C.B.E.

Secretary to the International Commission

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LONDON :

Printed by Order of the International Commission on Zoological Nomenclature

Sold at the Publications Office of the Commission
41, Queen's Gate, London, S.W.7.

1946

Price six shillings and seven pence

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ON THE QUESTION OF THE OLDEST AVAILABLE TRIVIAL NAME FOR THE SPECIES RENAMED *DIAPTOMUS VULGARIS* BY SCHMEIL IN 1897 (CLASS CRUSTACEA, ORDER COPEPODA)

By Robert Gurney.

(*Oxford.*)

(Commission's reference Z.N.(S.)8.)

In 1853 (*Bull. Soc. imp. Nat. Moscou* **26** (No. 1) : 75) Fischer published a description under the name *Cyclopsina coerulea* and gave, *inter alia*, as synonym *Cyclops coeruleus* O. F. Müller, 1785.

Fischer's name was adopted by Richard, Schmeil and many other authors for a species of the genus *Diaptomus* Westwood, 1836, *in* Partington, *Brit. Cyclop.* **2** : 228. This species was very fully described by Schmeil in 1896 (*Bibliotheca zool.* **21** : 59). Later (1897, *ibid.* **21** : 168) Schmeil replaced the name used by Fischer, proposing the name *Diaptomus vulgaris* on the ground that Müller's species is unrecognisable. Schmeil stated :—" Da Fischer seine *Cyclopsina coerulea* mit dem vollkommen unsicheren *Cyclops coeruleus* Müller identifizierte, so musste ich leider—um den für die Mitarbeiter am ' Tierreich ' massgebenden ' Regeln ' etc. gerecht zu werden—diese Art neu benennen."

Schmeil's new name has been generally, but not universally, adopted.

Now Schmeil's action seems hardly permissible. It would be correct if it could be shown that Fischer was wrong in his identification; but it is just as probable that he was right as wrong—it is impossible to say.

On the other hand, if Schmeil's name should be dropped, what would be the correct name? *Diaptomus coeruleus* (O. F. Müller) or *Diaptomus coeruleus* (Fischer)? It can hardly be the former, since Müller's species is unrecognisable, and I consider that no author's name should attach to a species unless he has given an adequate description. On the other hand, *Diaptomus coeruleus* Fischer might be invalidated by the rules.

On the whole, it would be more convenient to uphold Schmeil's name *vulgaris*, even if it is not strictly correct.

Postscript (dated 15th August 1944): Since the foregoing case was submitted to the Commission, the question at issue has been discussed by Rylov (1930, *Zool. Anz.* **88** : 111) and by myself (1931, *British Fresh-Water Copepoda* **1** : 158). Rylov claims to have rediscovered Fischer's species, which he finds to be specifically the same as that described by Schmeil, though differing in some details which might permit of the latter being regarded as a variety or subspecies. He therefore adopts the name *Diaptomus coeruleus* Fischer. I, on the other hand, have used the name *Diaptomus vulgaris* Schmeil on the ground that no ambiguity attaches to it, whereas *Diaptomus coeruleus* can only be used, according to the rules, with Müller's name as author, although we do not know and never can know what species Müller had before him.

PROPOSED SUPPRESSION OF THE NAME *GRAPTOLITHUS* LINNAEUS, 1768 (CLASS GRAPTOLITHINA, ORDER GRAPTOLOIDEA [2])

By O. M. B. Bulman, Sc.D., F.R.S.
(*University Lecturer in Palaeozoology, Cambridge University.*)

(Commission's reference Z.N.(S.)11.)

The name *Graptolithus* was applied by Linnaeus in 1735 (*Syst. Nat.* (ed. 1) : [5]) and in 1768 (*ibid.* (ed. 12) **3 : 173**) to what he regarded as inorganic markings (such as dendritic incrustations and " ruin-marble ") simulating fossils, and when, in 1768, he included *Graptolithus sagittarius* and *G. scalaris*, these were considered to be of inorganic nature. The former species is possibly a fossil plant, and the latter probably a graptolite.

Graptolithus scalaris Linnaeus, 1768, was believed by Wahlenberg (1821, *Nov. Act. Soc. reg. Sci.*, Upsala **8 : 92**) to be a cephalopod, and was quoted under the generic title of *Orthoceratites* (*Orthoceratites* Gesner, 1758, *Tract. phys. Petrif.* : 42).[3] Wahlenberg was thus the first to recognise its organic character.

The name *Priodon* was proposed, probably to include both Linnaeus' species, by Nilsson (MS., see Hisinger, 1831, *Esquisse Tabl. Petrif. sued.* (ed. 2) : 29). This name, being preoccupied by *Priodon* Cuvier, 1829, *Règn. anim.* (ed. 2) **2 : 225**,[4] was later modified to *Prionotus* Nilsson (MS., see Hisinger, 1837, *Lethaea suec.* : 113), which, however, was also preoccupied (by *Prionotus* Lacépède, 1802, *Hist. nat. Poiss.* **3 : 336**). *Prionotus* Nilsson MS. seems to have been regarded as a synonym of *Lomatoceras* Bronn, 1834, *Lethaea geogn.* **1** (1) : 55 by Bronn (*ibid.* : 56), but both *Priodon* and *Prionotus* are more properly synonyms of *Graptolithus* Linnaeus, 1768, since they were employed by Hisinger to include *G. scalaris* Linnaeus and *G. sagittarius* Linnaeus. It is not clear why they were proposed, and they were never in general use; for further discussion of the question, see Elles and Wood, 1902, *Monogr. Brit. Grapt.* (2) : vii, and Tullberg, 1882, *Bihang K. svensk. Vet.-Acad. Handl.* **6** (No. 13) : 7.

Graptolithus scalaris Linnaeus was selected by Beck (1839, *in* Murchison, *Silur. Syst.* **2 : 696**) as the type of the genus *Graptolithus*. Barrande (1850, *Grapt. Bohême* : 34) considered it identical with *G. sagittarius* Linnaeus, but

[2] The graptolites in the past have commonly been placed in the Class Hydrozoa of the Phylum Coelenterata. The systematic position of the group is, however, obscure and it has here been thought better, while provisionally retaining the graptolites in the Phylum Coelenterata, to treat this group as constituting a separate Class, Graptolithina. (int'd) F.H. 31st January, 1945.

[3] A proposal that the International Commission should suppress Gesner, 1758, *Tract. phys. Petrif.* for nomenclatorial purposes under their plenary powers has been received from Dr. J. Brookes Knight. See p. 222 below.

[4] Cuvier's manuscript name *Priodon* was first published by Quoy & Gaimard, 1824, *in* Freycinet, *Voy.* " *Uranie* " *et* " *Phys.*" (Zool.) **1 : 377**. In addition, the name *Priodon* Berthold, 1827, Latreille's *Fam. Thierr.* : 57, the name of a genus in the Class Mammalia, has priority over *Priodon* (Nilsson MS.) Hisinger, 1831.

this was denied by Hall (1868, 20*th Ann. Rep. N.Y. State Cab. nat. Hist.* : 228), who adhered to *G. scalaris* Linnaeus as the type.

It may probably be accepted that *Graptolithus scalaris* Linnaeus, 1768, was a real graptolite, and this was definitely selected as the type by Beck, but there is considerable uncertainty about the form, and *G. scalaris* Linnaeus is included only with a note of interrogation among the synonyms of *Climacograptus scalaris* (His.) by Elles and Wood (1906, *Monogr. Brit. Grapt.* (5) : 184). In view of the doubtful nature of the genolectotype and the clearly expressed intention of Linnaeus that the name was to denote inorganic objects, it is suggested that its use as a generic name be officially abandoned and that *Graptolithus* Linnaeus, 1768, be placed on the list of obsolete generic names.

PROPOSED SUSPENSION OF THE *RÈGLES* FOR *MONOGRAPTUS* GEINITZ, 1852 (CLASS GRAPTOLITHINA, ORDER GRAPTOLITHOIDEA) [5]

By O. M. B. Bulman, Sc.D., F.R.S.

(*University Lecturer in Palaeozoology, Cambridge University.*)

(Commission's reference Z.N.(S.)11.)

The name *Lomatoceras* was erected in 1834 (*Lethaea geogn.* **1** (1) : 55), by Bronn with *Lomatoceras priodon* n. sp. (*ibid.* **1** (1) : 56), as the genotype. In 1839, Beck (*in* Murchison, *Silur. Syst.* **2** : 696) stated (but erroneously, as will be explained later) that the name was preoccupied for a genus of insect, and cited *Lomatoceras* Bronn as a synonym of *Graptolithus* Linnaeus, 1768.[6] The name *Lomatoceras* Bronn was employed by Eichwald in 1840 (*Ueber silur. Schichtensyst. Esthland* : 101), but not, apparently, by any other author, and it was withdrawn by Bronn,[7] presumably in deference to Beck's assertion, in 1848 (*Index palaeont.* (1) *Nomencl. palaeont.* : 551, 667) when the species was referred to *Graptolithus* Linnaeus.

Barrande, in 1850 (*Grapt. Bohême* : 15), divided the genus *Graptolithus* Linnaeus into two subgenera, *Diprion* Barrande and *Monoprion* Barrande, the latter with fourteen genosyntypes (: 18) including *Lomatoceras priodon* Bronn; no type was selected. Geinitz used the name *Monograpsus* [sic] in 1852 (*Verstein Grauwackenform.* **1** : 19, 32) to cover the subgenus *Monoprion* and another of Barrande's genera, *Rastrites* Barrande, 1850 (*Grapt. Bohême* : 64); *Lomatoceras priodon* Bronn was one of twenty-eight genosyntypes. Geinitz asserted that *L. priodon* Barrande was the species upon which the characters of *Monoprion* Barrande were founded, and to this extent that species becomes a genolectotype of *Monoprion* Barrande. Geinitz further stated (*loc. cit.* : 19) that the change in name from *Monoprion* to *Monograpsus* was made with the object of securing uniformity with the name *Diplograpsus* McCoy, 1851, *Brit.*

[5] See footnote 2.

[6] See p. 163 above.

[7] Under the *Règles Internationales*, it is not within the power even of the original author of a generic or specific name to withdraw that name, once it is published.

palaeoz. Rocks (1) : 3, 7,[8] but it is clear that he had also enlarged the scope of the genus.

Later usage has changed *Monograpsus* to *Monograptus*.

Monograptus priodon (Bronn, 1834) was cited as an " example " of the genus by Lapworth (1873, *Geol. Mag.* **10** : 500–504, 555–560) in his table of the graptolite genera, but, although it would seem that he intended his " examples " to be regarded as typical species (and stated as much for the subgenera of *Diplograptus*[9] on page 557), he did not definitely state a type for *Monograptus*, and this appears to have been done first by Bassler in 1915 (*Bull. U.S. nat. Mus.* **92** : 822) with *Lomatoceras priodon* Bronn.

It may be remarked that Miller (1889, *N. Amer. Geol. Palaeont.* : 196) attributed the authorship of the genus to Emmons, who mentioned it in 1855 (*Amer. Geol.* **1** : 106) without quoting Geinitz's name; Emmons' species are considered by Ruedemann (1908, *Grapt. New York* **2** : 450) to be indeterminate fragments of species of *Didymograptus* McCoy, [1851],[10] *in* Sedgwick & McCoy, *Syn. palaeoz. Rocks* **2** (fasc. 1) : 9, and the matter need not be pursued.

In 1896, Gurley (*J. Geol.* **4** : 79) stated that he could find no trace of the preoccupation of the name *Lomatoceras* and urged that this name should stand by virtue of priority. *Lomatoceras* Bronn, 1834, is the only genus of this name recorded by Sherborn (1927, *Index Anim.* Pars secund. (14) : 3637) and it would seem true that Beck's original statement was incorrect.[11]

Lomatoceras Bronn, 1834, with *Lomatoceras priodon* Bronn, 1834, has clear priority over the name *Monograptus* Geinitz, 1852, with the same type; but the latter name has become well established in an extensive literature over a period of nearly 80 years. It is extensively employed in stratigraphical geology, being perhaps the most important and widely distributed single graptolite genus. Of the 23 standard zones and subzones of the British Silurian (cited by Elles and Wood) 16 are named after species of the genus *Monograptus* and zones have been established on species of this genus not only throughout Europe, but also in America, Asia and Australia. Moreover, the name appears in nearly every elementary textbook of palaeontology and stratigraphy. No useful purpose would be served by an insistence upon the re-establishment of an almost forgotten name (*Lomotoceras*) originally bestowed under the impression that the graptolites belonged to the Cephalopoda; and the name *Monoprion* Barrande, 1850, which, apart from the work of Barrande, has also found no place in the classic literature on graptolites, is equally undesirable.

In the opinion of the applicant, the strict application of the rules to the present case would result in greater confusion than uniformity and he therefore submits that under their plenary powers the International Commission should

[8] The name *Diplograpsus* McCoy, 1851, is an emendation of the name *Diplograpsis* McCoy, 1850, *Ann. Mag. nat. Hist.* (2) **6** : 271.

[9] The name *Diplograptus* Hall, 1865, *Geol. Surv. Canad. Fig. Descr. Canad. org. Remains* **2** : 110, is an emendation of *Diplograpsis* McCoy, 1850. See preceding footnote.

[10] The name *Didymograptus* McCoy, [1851], is an emendation of the name published by McCoy as *Didymograpsus*. This emendation was made by Hall, 1865, *Geol. Surv. Canad. Fig. Descr. Canad. org. Remains* **2** : 41.

[11] It may be noted also that in the latest Nomenclator (Neave, 1939, *Nomencl. zool.* **2** : 987) the only genus with the name " *Lomatoceras* " cited is *Lomatoceras* Bronn, 1834. There is, however, a genus of insects with the name *Lomatocera*, of which Bronn was the author, but this was not published until 1848, *Index pal.* : 667, *i.e.* fourteen years after the publication of the name *Lomatoceras* Bronn, 1834. It is possible that Beck's statement in 1839 that *Lomatoceras* was preoccupied by an older name in insects may have been due to his having been aware of the manuscript name *Lomatocera* Bronn and erroneously supposed that it had priority over the name *Lomatoceras* Bronn, 1834.

suppress the names *Lomatoceras* Bronn, 1834, and *Monoprion* Barrande, 1850, and should validate *Monograptus* Geinitz, 1852 (= an emendation of *Monograpsus* Geinitz, 1852) with *Lomatoceras priodon* Bronn, 1834, as type, and that the name *Monograptus* Geinitz, 1852, so validated and with the above species as type, should be placed on the *Official List of Generic Names in Zoology.*

PROPOSED SUSPENSION OF THE *RÈGLES* FOR *RETIOLITES* BARRANDE, 1850 (CLASS GRAPTOLITHINA, ORDER GRAPTOLITHOIDEA) [12]

By O. M. B. Bulman, Sc.D., F.R.S.)
(*University Lecturer in Palaeozoology, Cambridge University.*)

(Commission's reference Z.N.(S.)11.)

Barrande in 1850, *Grapt. Bohême* : 68, erected the genus *Gladiolites* with the species *Gladiolites geinitzianus* Barrande as the genotype, by monotypy. He appended a footnote (: 68) :—

> Si l'affinité entre le nom générique *Gladiolites* et *Gladiolus*, désignant une plante, pouvait fair élever quelque objection contre le premier, nous proposerions de lui substituer celui de *Retiolites*.

The name *Retiolites* Barrande was used in the following year by Suess (1851, *Naturw. Abhandl. Haidinger* **4** (4) : 91) and has been adopted by all later authors with the exception of Gurley (1896, *J. Geol.* **4** : 79). There is no question of preoccupation, although it may be mentioned that at that time a fossil *Gladiolus* would presumably have been termed *Gladiolites*.[13]

As in the case of *Monograptus* Geinitz, 1852,[14] the name *Retiolites* Barrande has been widely employed for a very considerable time, and the continued use of this originally alternative name can here lead to no supposed injustice, since Barrande is himself the author.

The name *Retiolites* Barrande, 1850, is widely employed in stratigraphical geology. The "Retiolites Shale" is a well-known, long-established and important stratigraphical unit in the Upper Silurian of Sweden and has been extensively quoted not only in Scandinavian literature but also in correlation with Europe and America. The name *Retiolites* Barrande figures also in nearly every elementary textbook of palaeontology and stratigraphy. In the opinion of the applicant, the strict application of the rules as applied to the present case would clearly result in greater confusion than uniformity.

The applicant, therefore, submits that the name *Retiolites* Barrande, 1850, with *Gladiolites geinitzianus* Barrande, 1850, as type, be placed in the *Official List of Generic Names in Zoology* under suspension of the rules and that the name *Gladiolites* Barrande, 1850, be suppressed.

[12] See footnote 2.

[13] Article 1(i) of the *Règles Internationales de la Nomenclature Zoologique* (International Code of Zoological Nomenclature) reads (in the substantive French text) : "La Nomenclature zoologique est indépendante de la Nomenclature botanique, en ce sens qu'un nom d'animal ne peut être rejeté pour ce seul motif qu'il est identique à un nom de plante."

[14] See p. 164 above.

ON THE TYPE OF THE GENUS *DIPLODINIUM* SCHUBERG, 1888 (CLASS CILIOPHORA)

By Charles A. Kofoid.

(*Department of Zoology, University of California, Berkeley, California.*)

(Commission's reference Z.N.(S.)13.)

In our revisions of the ciliates of the ruminant stomach we meet with a type of difficulty in nomenclature for which we wish, if possible, to have some precedent in its solution, and in any case to have your advice as to the wisest mode of procedure, with a view to eliminating further confusion by later workers in this field. I am anxious to have this point settled on the soundest possible lines.

If you will refer to the paper of Schuberg published in 1888 in vol. 3 of the *Zoologische Jahrbücher für Systematik*, page 404, you will find that Schuberg therein establishes the genus *Diplodinium* for those OPHRYOSCOLECIDAE having a second membranelle zone instead of one only. This genus is readily recognised and segregated from the other ciliates of the ruminant stomach by this character. The character is a valid one.

For the single species in this genus he cites "*Entodinium dentatum*", previously described by Stein, 1858, in *Abh. d. Kais. Böhm. Ges. Wiss.* vol. 10, pages 69–70, without figures, stating: "und die Stein weniger übersehen". In this statement he clearly takes upon himself the assumption that Stein overlooked entirely the very prominent and characteristic second membranelle zone. Stein's protozoological work is characterised throughout by meticulous care in the presentation of details. It seems wholly improbable that Stein could have overlooked so prominent and so distinctive a character as the dorsal zone. Personally, I doubt the accuracy of Schuberg's assumption. Furthermore, we have the statement of Eberlein, *Zeit. Wiss. Zool.* vol. 59, pages 269–270, that he had found species with six spines resembling Stein's "*dentatum*", without the second membranelle zone and therefore referable as originally placed by Stein in the genus *Entodinium* Stein, 1858, *Abh. Böhm. Ges.* (5) **10** S.B. : 69. Schuberg, however, uses the name "*dentatum*" in connection with the animal with the dorsal membranelle zone which he assigns to the genus *Diplodinium* Schuberg, 1888, and makes the assumption that this was the species which Stein had before him.

Several of the genera in OPHRYOSCOLECIDAE run a series of orthogenetic pattern in which the spines increase in number from none to at least six. It is therefore theoretically probable that Stein and Eberlein were right, and that both saw a species of *Entodinium* Stein with six spines, to which Stein gave the trivial name "*dentatum*".

Schuberg was unquestionably right in the case of a species of *Diplodinium* Schuberg with six spines, and that was unquestionably the animal which Schuberg had for which he used the name "*Diplodinium dentatum*".

The question now is: Are we safe in stating that "*dentatum*" is the type species of *Diplodinium* Schuberg, but that Schuberg was wrong in assuming that this was the same as Stein's *dentatum*? If the trivial name *dentatum* is not available, may we designate some other species as the type of *Diplodinium* Schuberg and thus preserve the generic name?

ON PROFESSOR CHARLES A. KOFOID'S APPLICATION RELATING TO THE TYPE OF THE GENUS *DIPLODINIUM* SCHUBERG, 1888 (CLASS CILIOPHORA)

By Francis Hemming, C.M.G., C.B.E.

(Secretary to the International Commission on Zoological Nomenclature.)

(Commission's reference Z.N.(S.)13.)

The application made to the International Commission by Professor Charles A. Kofoid for a ruling as to the type of the genus *Diplodinium* Schuberg, 1888 (Class Ciliophora) was contained in a letter dated 24th December 1930. This application was transferred to me by my predecessor shortly before the outbreak of war in 1939, together with the papers relating to certain other uncompleted cases then before the Commission. Owing to wartime conditions it was not until 1944 that I was able to examine the papers relating to this and other outstanding cases with a view to their publication in the *Bulletin of Zoological Nomenclature*, which had been founded in the previous year for the purpose of publishing documents of this kind. In preparing Professor Kofoid's application for the printer, it became apparent that additional information was needed, for, if the Commission were to take the view (suggested in Professor Kofoid's application) that Schuberg was in error when he identified as *Entodinium dentatum* Stein, 1858, the species which he (Schuberg) took in 1888 as the type of his monotypical genus *Diplodinium*, it would be necessary for the Commission to indicate what was in fact the oldest nomenclatorially available name for the species so misidentified.

I accordingly wrote to Professor Kofoid on 24th August 1944, asking for information on this question. On 3rd January 1945 I received a letter dated 11th December 1944 from Professor Harold Kirby, Department of Zoology, University of California, stating that in view of his age Professor Kofoid did not feel able to deal with this matter and had asked him (Professor Kirby) to do so on his behalf. Professor Kirby's conclusions were embodied in a letter dated 17th March 1945, in which he stated that, if it was ultimately concluded that the name *Entodinium dentatum* Stein, 1858, did not apply to, and therefore could not be used for, the species selected by Schuberg as the type of the monotypical genus *Diplodinium* Schuberg, 1888, the next name (and therefore in those circumstances the correct name) for the type species of that genus was *Diplodinium denticulatum* Fiorentini, 1889 (" Intorno ai Protisti dello stomaco dei Bovini." Pavia, frat. Fusi). At the same time Professor Kirby added that he had re-examined the premises upon which Professor Kofoid's application of 1930 had been based and drew attention to the different conclusions on this subject which had later been formed by Professor Kofoid (Kofoid and MacLennan, 1932) and by Wertheim (1935).

The additional information kindly furnished by Professor Kirby on behalf of Professor Kofoid throws an entirely new light on the application now before the Commission. The relevant portions of Professor Kirby's letter are published below, in order that all the available data may be assembled for the consideration of this case.

ON THE TYPE OF THE GENUS *DIPLODINIUM* SCHUBERG, 1888 (CLASS CILIOPHORA)

By HAROLD KIRBY.

(*Department of Zoology, University of California, Berkeley, California.*)

(Extract from a letter dated 17th March 1945 from Professor Kirby to the Secretary to the International Commission).

(Commission's reference Z.N.(S.)13.)

I do not know the date of Professor Kofoid's communication to the Commission but in his only published material on the subject Professor Kofoid has taken exactly the opposite position to that indicated in his communication to the Commission. In that communication he thought it likely that Stein really had an *Entodinium* (with one membranelle zone); that Schuberg was wrong in assuming that Stein overlooked the second one and he (Schuberg) had before him the same ciliate; and that Eberlein (1895) found (and figured) the true *Entodinium dentatum* studied by Stein. But Kofoid and MacLennan (1932 : 57) in a section of their monograph on *Diplodinium* entitled " Type species of *Diplodinium* Schuberg " wrote :—

> Eberlein (1895) disputed the existence of the two membranelle zones reported by Schuberg in Stein's *E. dentatum* and claimed to have found only an adoral spiral in this species. Since none of the many later workers has corroborated Eberlein's findings, but many times have found ciliates corresponding to Schuberg's description, we feel that Eberlein was mistaken, and that Stein's *E. dentatum* and Schuberg's *Diplodinium dentatum* are identical.

Wertheim (1935 : 418) gave a discussion of " *Entodinium dentatum* " which bears upon the question of whether or not the type species of *Diplodinium* was erroneously determined by Schuberg. The discussion is worthy of particularly careful consideration, because Wertheim's paper is a comprehensive monographic treatment of OPHRYOSCOLECIDAE based on studies in ruminants in Europe where Stein and Eberlein worked. Wertheim is emphatic in his opinion that the type species of *Diplodinium* is properly named *Diplodinium dentatum* (Stein, 1858) Schuberg, 1888. It is the ciliate that Stein studied and that Schuberg had before him. The distinctive caudal structure of six spines is not found in any other ophryoscolecid, and there is no doubt that Stein and Schuberg were concerned with the ciliate that Fiorentini later (and unnecessarily) named *Diplodinium denticulatum*. Eberlein was clearly mistaken in supposing that he found an *Entodinium* corresponding to Stein's description. No one before or after Eberlein has seen a true *Entodinium* with this caudal structure—not even in the same host species, in the same regions, in the same material Stein studied. (All these assertions are quoted from Wertheim).

If the International Commission places *Diplodinium* on the *Official List of Generic Names in Zoology*, it seems to me that its type can properly be given as *Diplodinium dentatum* (Stein, 1858) Schuberg, 1888, as in the monographs by Kofoid and MacLennan (1932) and Wertheim (1935). The case for this name

is reasonably clear cut, and the exercise of the plenary powers should not be required. It was the only named species included in *Diplodinium* when that genus was established, and we are in a better position to know what organism the early authors dealt with than we can reach in various other protozoan groups. It may be of interest, however, that Schuberg did not actually give the combination *Diplodinium dentatum*. It is implied in his use of the name *Entodinium dentatum* and his assignment of that ciliate to the new genus *Diplodinium*.[15]

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STEIN, F., 1858. Über mehrere neue im Pansen der Wiederkäuer lebende Infusorienthiere. *Abh. Böhm. Ges. Wiss.* **10** : 69–70.

WERTHEIM, P., 1935. Infusoriji iz želuca preživača s područja Jugoslavije (etc.). *Veterinarskog Arhiva* **5** : 388–526.

[15] The *Règles Internationales de la Nomenclature Zoologique* do not require that, in order to be valid, a generic name should, when first published, be actually cited in combination with the trivial name of the species selected as the type, though such citation is commended by the " Recommandation " attached to Article 29 of the *Règles*.

ON THE STATUS OF THE GENERIC NAME *ASPIDOPROCTUS* NEWSTEAD, 1901 (CLASS INSECTA, ORDER HEMIPTERA)

By T. D. A. Cockerell.

(*University of Colorado, Boulder, Col.*)

(Commission's reference Z.N.(S.)46.)

In 1901 Newstead, [April 1901], *Proc. zool. Soc. Lond.* **1900** (4) : 948 described a species of COCCIDAE, of which he said that he had intended to place it in a new genus *Aspidoproctus*, but that he had decided that this was unnecessary. He therefore called the insect *Walkeriana pertinax* Newstead, [1901], *ibid.* **1900** (4) : 947 pl. 59.

Later (August 1901, *Entomologist* **34** : 227), the name *Lophococcus* Cockerell was proposed for a different species (*Lophococcus mirabilis* Cockerell, 1901, *ibid.* **34** : 248, which is now considered congeneric with *Walkeriana pertinax* Newstead, [1901].

Still later, authors have resurrected the name *Aspidoproctus* Newstead, and this is now used as the generic name for the species in question (see Morrison (H.), 1928, *Tech. Bull. U.S. Dep. Agric.* **52** : 151).

My idea has been to accept the first published name, but there is confusion as to the meaning of the Code in this matter and this confusion should be cleared up by the International Commission.

ON THE STATUS OF THE GENERIC NAME *PHORANTHELLA* TOWNSEND, 1915 (CLASS INSECTA, ORDER DIPTERA)

By the late J. M. Aldrich.

(Commission's reference Z.N.(S.)103.)

Townsend, 1915, *Proc. biol. Soc. Wash.* **18** : 23, has this :—

Phoranthella new genus

Genotype, *Phoranthella morrisoni* Townsend new name for *Phorantha* (*Hyalomyia*) *occidentis* Coquillet p.p., 1897, Rev. Tach. 44 (nec *Hyalomyia occidentis* Walker, 1856 Diptera Saundersiana, 260)—Holotype labeled by Coqt. as above, loc. Georgia (Morrison).—Type No. 19139 U.S.N.M. ♀.

Coquillet's series included specimens from 12 localities, in probably 40 specimens.

Without stating that the whole series was misidentified by Coquillet (note the " p.p."), Townsend has taken out one specimen as misidentified and made it the type of a new species without further description. In other words, there is no description of *morrisoni* either by Townsend or Coquillet.

Question : Does *morrisoni* have any standing ?

Of course without the " pro parte " this would be an ordinary case. But with it a new element comes in.

The genus, I think, falls if the species has no standing; but the status of the species interests me most.

PROPOSED SUSPENSION OF THE *RÈGLES* FOR THE GENERIC NAME *DIADEMA* HUMPHREYS, 1797 (CLASS ECHINOIDEA, ORDER AULODONTA)

By Th. Mortensen.

(*Universitets Zoologiske Museum, København.*)

(Commission's reference Z.N.(S.)52.)

In "A Vote on some Echinoderm Names" (1932, *Ann. Mag. nat. Hist.* (10) **10** : 360–365) I gave a full account of the history of this name, *Diadema*, from its first appearance in literature in 1711 until 1912, when after having been in constant and unanimous use in the whole echinological literature, zoological and palaeontological, it was rejected by Jackson as being a synonym of the Cirripedian *Coronula* Schumacher, 1817, and substituted by the name *Centrechinus*. With the exception of Jackson, H. L. Clark, Deichmann, Fisher, and Hawkins, all Echinologists sided with me in recommending that the name *Diadema* (Order Aulodonta, Suborder Diademina) should be made a nomen conservandum for the Echinoids, with genotype *Echinometra setosa* Leske, the species that has always been regarded as such.

When at the International Zoological Congress in Lisbon, 1935, I brought the case of the name *Diadema* before the Commission on Nomenclature, Mr. Francis Hemming advised to have it adjourned until the use of this name in the "Museum Calonnianum", 1797, had been made the object of a careful investigation. During a visit to London in July 1936 I had the opportunity of undertaking such investigation, the result of which I publish here.

In the said "Vote on some Echinoderm Names" I stated (: 361) as follows :—"In the anonymous 'Museum Calonnianum', 1797 (: 64), the name *Diadema* is used as a genus-name for Echinoids, but it is not possible to see which species should be regarded as the type of this genus." It was on the authority of Jackson ("Phylogeny of the Echini" : 27) * that I gave this statement (I had at that time never seen the "Museum Calonnianum"), but the statement is not correct, as the following analysis will show.

The "Museum Calonnianum" (whose author has been shown to be the London naturalist-dealer G. Humphreys) has under the "Class II. Echinus. Oursin de Mer—Sea Urchin" the following five genera : *Placenta*, *Scutum*, *Cor*, *Diadema*, and *Cidaris*. Although it is quite possible to identify several of the species enumerated under these genera, there is no reason for entering on a discussion of all of them. It is only the genus *Diadema* that has any interest and needs a detailed discussion.

Under the genus *Diadema* Turban, the following species are enumerated :—

1183. *vulgatum*. (*a*) with the spines on. L'Ordinaire—Common. Normandy.

This no doubt must be the common N. Atlantic species *Psammechinus miliaris* (Müll.).

1184. *orbiculatum*. L'Orbiculaire—Orbicular. Normandy. *Echinus esculentus* Linn.

* Jackson says here : "There are 12 species listed under *Diadema*, but of these only one is recognisable, as it is stated to be the same as *Echinus esculentus* Linné. On this evidence, if this work should be accepted, which is very doubtful, the genus *Diadema* would become a synonym of *Echinus*, as *esculentus* is the type of that genus." The fact that several of the species, not only the first one, are recognisable does away with this argument for regarding *Diadema* as a synonym of *Echinus*.

This is clear enough. It is curious that Humphreys gives new names to several species which he identifies with Linnean species—e.g., *Echinus orbicularis, Echinus rosaceus.*

1185. *depressum.* Le Plat—Flatted. West Indies.
This species cannot be identified.

1186 (misprint 1116). *virescens.* Les Epines Vertes—Green-spined. Newfoundland. Has the spines on.

This can clearly only be *Strongylocentrotus droebachiensis* (O. Fr. Müller).

1187. *aciculatum.* Les Epines Pourpres—(dark) Purple, (long) Needle-spined. Mediterranean. Has the spines on. (The words " dark " and " long " are handwritten additions in the copy of the British Museum.)

This can clearly only be *Paracentrotus lividus* (Lamarck).

1188. *ovatum.* (*a*) Native colour, with the teeth and some of the spines; (*b*) bleached; (*c*) opened to show the internal structure. L'Oeuf—Egg. West Indies.

This may probably be *Tripneustes esculentus* (Leske).

1189. *rotundum.* Le Circulaire—Circular. East Indies. Unidentifiable.

1190. *limatulum.* Les Epines en forme de Lime—Blunt file-like, spined. West Indies.

This can very well be *Diadema antillarum* Philippi (1845, *Archiv f. Naturgesch.* **1** : 355), as shown by the description of the spines.

1191. *subulatum.* Les Epines en forme d'Alêne—Awl-like, spined. West Indies.

This may perhaps be *Lytechinus variegatus* (Lamarck).

1192. *maculatum.* Les Epines Tachétées—Spotted red-spined. Mediterranean. Rare.

This must evidently be *Sphaerechinus granularis* (Lamarck).

1193. *striatum.* Les Epines Longues Striées—Long striated spined. Mediterranean. Rare. This has several of *Serpula lumbricalis,* species 15, entwined round its spines.

This must be one of the Mediterranean Cidarids, either *Cidaris cidaris* (Linn.) or *Stylocidaris affinis* (Philippi).

1194. *sceptiferum.* Les Epines au Sceptre Couronné—Coronated sceptre-spined. Tranquebar. M.P. 3051. Extremely scarce.

M.P. is " Museum Portlandianum ", 3051 : " The coronated sceptre-spined *Echinus*, extremely scarce, from the E. Indies, *Favanne*, p. 80. fig. L, the only specimen of its kind in England."

De Favanne. Conchyliologie, 1780, pl. lxxx. fig. L, is evidently *Plococidaris verticillata* (Lamarck).

Thus, among the identifiable species under Humphreys' *Diadema* is one species, *limatulum*, which may very well be the species always understood as *Diadema*, the *Diadema antillarum* Philippi, and since all the other identifiable species belong to long-established genera, Humphreys' *Diadema limatulum* would be the only suitable species to select as the genotype of *Diadema.*

The Echinoid genus name *Diadema* thus originates from Humphreys, 1797, not from Gray, 1825 (" An Attempt to divide the Echinida, or Sea Eggs, into Natural Families," *Annals of Philosophy* **26**), as is usually stated, and very probably Gray did not mean to establish *Diadema* as a new genus of Echinoids. It can hardly be doubted that he knew the " Museum Calonnianum ", and that he took the name from there. In general, he adds the name of the author to his genera, and at the genera *Echinanthus* and *Echinolampas* he adds " nob.", thus directly indicating that here are new genera established by him. That he does not add any author's name to *Diadema* is quite natural, since " Museum Calonnianum ", from where he probably took it, is anonymous. Unfortunately this argument is not conclusive, since he does not add any " nob." either at *Astropyga*, which—so far as known—has not been used before 1825. But in any case, *Gray is not the first to use the name* Diadema *for an Echinoid. The name dates from* 1797 *and thus has the absolute priority in the use for the Echinoids* —even if we do not count Schynvoet's name from 1711 or Lamarck's use of the not latinised form " les Diadèmes " in 1816—*and the name accordingly was preoccupied already when Schumacher in* 1817 *and Ranzani in* 1820 *used it for the Cirripedian* Lepas diadema *Linnaeus*, for which Oken had, in 1815, established the genus *Coronula*. Schumacher's and Ranzani's *Diadema* is, of course, only a dead synonym of *Coronula* Oken,* but the Echinoid name *Diadema* Humphreys remains unaffected thereby.

Thus far there would seem to be no doubt of the validity of the name *Diadema* as an Echinoid genus name. But, again, there is a complication.

The International Commission on Zoological Nomenclature has had a discussion about the " Museum Calonnianum ", resulting in the *Opinion* 51, which says : " The Museum Calonnianum, 1797, is not to be accepted as basis for any nomenclatorial work." The object of this *Opinion* was, of course, to prevent undesirable nomenclatorial changes based on this very little known work. If the Commissioners had known the case of the name *Diadema*, in which the " Museum Calonnianum " serves to prevent the extremely undesirable change of that name, they would hardly have given the *Opinion* 51 the quoted wording, the more so since the *Opinion* 51 was not accepted unanimously by the Commissioners. But this wording necessitates separate action in this case for declaring the Echinoid name *Diadema* a nomen conservandum.

A few words must be said about the question : which species of sea-urchin is to be the genotype of *Diadema*? If it were not already fixed, Humphreys' species *limatulum* would have to be selected as the genotype, since it may be identical with the species now unanimously named *Diadema antillarum* Philippi. But Gray, *op. cit.*, already fixed the species " *Echinometra setosa* " of Leske as the genotype. In doing so he actually was in conformity with the opinion of the present author that the only species in the " Museum Calonnianum " that could be made the genotype of *Diadema* is *limatulum* possibly = *Diadema antillarum* Philippi, this latter being at that time (as a matter of fact up till 1904) regarded as identical with the Indo-Malayan " *Echinometra setosa* " of Leske, the name *limatulum* thus being apparently synonymous with the older name *setosum*.

Having regard to the foregoing considerations, to the universal use of the

* The eminent authority on Cirripedians, Professor Hj. Broch, Oslo, writes me that even if Schumacher's *Diadema* had priority before the name *Coronula*, the latter is so generally known that it could only bring confusion to change it. " I think it out of question that the name *Diadema* could, on the whole, be taken into consideration as a genus name of a Cirripedian. It is a ' dead synonym ' of *Coronula*."

name *Diadema* for the Echinoids since Gray's time (up till 1912), and to the very unfortunate consequences (cf. " Vote on some Echinoderm names ", 1932, *Ann. Mag. nat. Hist.* **10** (10) : 360–362) of dropping this name—not because any other animal has a legitimate claim to it, but—formerly—because it was erroneously thought to be merely a dead synonym of the Cirripedian *Coronula*, now, because *Opinion* 51 forbids the use of a name from the " Museum Calonnianum "—I recommend that the International Commission on Zoological Nomenclature, acting in virtue of the plenary powers conferred upon them by the International Zoological Congress, should issue an *Opinion* in the following sense :—

> Nothing in *Opinion* 51 shall be held to invalidate the use of the generic name *Diadema* Humphreys (1797, Mus. Calonn. : 64) in Echinoids (genotype, as fixed by Gray 1825, *Echinometra setosa* Leske, 1778), and that generic name is hereby added to the *Official List of Generic Names in Zoology*.

P.S.—The manuscript of this note I submitted to Professor H. L. Clark, asking for his opinion about it. He informs me that in his opinion the description of the spines of *Diadema limatulum* rather suggests the West Indian Cidarid *Eucidaris tribuloides* (Lamarck) than *Diadema antillarum*. It had not occurred to me that the " file-like " spines could fit in with any other West Indian Echinoid than *Diadema antillarum*; but I have to agree that the spines of this Cidarid may, if well preserved, very well be described as " file-like ", and, if special weight is given to the word " blunt ", it is more likely that the *Diadema limatulum* of Humphreys was *Eucidaris tribuloides*, the spines of *Diadema antillarum*, if well preserved, being certainly not to be described as " blunt ". But if the spines are broken, as they would be sure to be in such an old specimen (these spines are exceedingly brittle and can only be kept tolerably intact on specimens treated very carefully, which, of course, they never were in olden days), they may very well be designated as blunt—as are actually the spines of the oral side, even when intact—and they are very decidedly and conspicuously *file-like*.

Accordingly the *Diadema limatulum* of Humphreys may have been either *Eucidaris tribuloides* or *Diadema antillarum*.

Anyhow, it is unquestionable that the name *Diadema* was first used as a genus of Echinoids, including several recognisable species, one of which may very well be identical with *Diadema antillarum* Philippi, closely related with the species that Gray selected as the genotype of *Diadema*. And since this name has been in unanimous use in the whole of the zoological and palaeontological literature from 1825 till 1912, and particularly in that literature which must for ever remain the basis of echinological science—and has been used also in 1925 in a main work like H. L. Clark's " Catalogue of the Recent Sea-urchins of the British Museum ", and is used particularly in vol. 3 of my Monograph of the Echinoidea—it will be impossible ever to get rid of the name *Diadema* in the Echinoids. On the other hand, there is nothing to speak in favour of the name *Centrechinus*, used only after 1912, and not in a single work of primary importance; it will rapidly share the fate of the immense number of other useless synonyms. I may well recall also the numerous (more than 25) valid names of recent and fossil Echinoids composed of *Diadema* (cf. " Vote on some Echinoderm names " : 362), and the general use of the technical term " diadematoid ". I can only find it an absurdity to drop the name *Diadema* and must emphatically recommend to have it placed on the official list of generic names as a nomen conservandum.

ON THE RELATIVE MERITS OF THE NAMES POLYPLACOPHORA AND LORICATA AS THE NAME FOR THE CLASS KNOWN AS " CHITONS " OF THE PHYLUM MOLLUSCA

By the late EDWIN ASHBY.

(Commission's reference Z.N.(S.)20.)

I beg to ask that a ruling be given as to which of the two names POLYPLACOPHORA or LORICATA should be used as the ordinal name of that group of the Phylum Mollusca known as " Chitons ".

It is undesirable to make changes in well-established names unless adequate justification is shown. The ordinal name POLYPLACOPHORA dating from Gray (J. E.), 1821, *Lond. med. Repos.* **15** : 234, has been used by the majority of workers from that date till now. Schumacher in 1817, *Essai nouv. Syst. Habit. Vers testac.* : 92, used the name LORICATA for the inclusion of multivalve Mollusca, recognising one genus only, but this name has not been used again in this respect till Iredale and Hull proposed it in 1923, *Aust. Zool.* **3** : 186.

The Law of Priority does not apply to ordinal names and therefore its adoption on such grounds cannot be valid. But it is thought by some that the word " Loricata " (lorica meaning a leather tunic) is more euphonious than " Polyplacophora ", and some workers would like to use it for this reason, although the name LORICATA has been used for crocodiles, for armadilloes and also, more or less loosely, for certain types of Protozoa.

The meaning of the compound word " Poly-placo-phora " cannot be bettered, namely " many-plates-form " and, if it was only the practice of scientists to pronounce scientific words in accordance with their meaning, any lack of euphony would disappear.

If well-established ordinal names are to be altered at the whim of any worker, it is surely making a farce of the avowed desire for uniformity in nomenclature and doing a disservice both to science and the public.

ON THE HOLOTYPE OF *FASCIOLA OVATA* RUDOLPHI, 1803 (CLASS TREMATODA, ORDER DIGENEA)

By G. WITENBERG.

(*Department of Parasitology, The Hebrew University, Jerusalem.*)

(Commission's reference Z.N.(S.)126.)

M. Braun (1901, *Zbl. Bakt* (Abt. 1) **29** : 12–19) found that the original vial containing specimens determined by Rudolphi as *Distoma ovatum* Rudolphi, 1809, *Entoz.* **2** (1) : 357 (= *Fasciola ovata* Rudolphi, 1803, *Archiv Zool.* (Wiedemann) **3** (2) : 25) contained two species. One of these species was accordingly selected by Braun as being the species described by Rudolphi and the species so selected was treated by Braun as *Prosthogonimus ovatus* (Rudolphi).

Do the rules in the International Code provide for the selection of a lectotype in such a case ?

ON THE RELATIVE STATUS OF THE NAMES *PETALIFERA* GRAY, 1847, AND *APLYSIELLA* FISCHER, 1872 (CLASS GASTROPODA, ORDER APLYSIOMORPHA)

By H. Engel.

(*Conservator, Zoölogisch Museum, Amsterdam.*)

(Commission's reference Z.N.(S.)150.)

Rang, 1828 (*Hist. nat. des Aplysiens*), describes sufficiently :—*Aplysia dolabrifera* Rang (: 51) and *Aplysia petalifera* Rang (: 52).

Gray, 1847, *Proc. zool. Soc. Lond.* **15** : 129–219, gives :—" A List of the Genera of Recent Mollusca, their Synonyms and Types ", and on page 162 we find :—

> No. 316. *Dolabrifera, Dolabella,* sp. Cuvier, 1817; Féruss. *Aplysia* b.* Rang. *Dolabella dolabrifera.*
> [? *Thallepus,* Swains., 1840, 357. *Th. ornatus* Sw.
> [*Petalifera. Aplysia petalifera.*

So we see that Gray promotes the trivial names *dolabrifera* and *petalifera* to generic status and then gives them as synonyms of each other.

Dolabrifera Gray then passed in literature.

For *Aplysia petalifera* Rang a new generic name is given by Fischer in 1872 (*J. Conch.*, Paris **20** : 296), which since then has passed in literature, namely *Aplysiella* Fischer.

Pilsbry, in 1896, *in* Tryon's *Manual of Conchology* **16** : 128, restores *Petalifera* Gray, 1847. He has till now been followed only by O'Donoghue (1930, *Proc. malac. Soc. Lond.* **19** (3) : 88).

The question is :—

(1) Is *Petalifera* Gray, 1847, sufficiently designated as a generic name ?
My answer is : " Yes, the designation *A. petalifera* is absolutely sufficient to define the genus, as the species was clearly described by Rang."

(2) Can a new generic name, given as a synonym of another new generic name, be regarded as available, when later authors are of the opinion that they are not synonyms ?

It is clear that Gray wanted to deal in the same way with the two species *Aplysia dolabrifera* Rang and *Aplysia petalifera* Rang, which were described together, and so felt himself compelled to promote both the trivial names to be generic names.

Gray in 1857 (*Guide syst. Distr. Mollusca Brit. Mus.* **1** : 199) gives the genus *Dolabrifera* Gray with three species : (1) *Aplysia dolabrifera* Rang, 1828; (2) *Aplysia ascifera* Gray, 1850; and (3) *Dolabrifera oahouensis* Gray, nom. nov. pro *Aplysia oahore* Gray, 1850.[16] At the same time Gray placed *Aplysia petalifera* Rang in the genus *Aplysia* Linnaeus, 1767, *Syst. Nat.* (ed. 12) **1** (2) : 1072, as species no. 30 of that genus (Gray, **1857** : 199) and no longer maintained either the generic name *Petalifera* Gray, 1847, or its synonymy with *Dolabrifera* Gray, 1847.

Are we to use the name *Petalifera* Gray, 1847, or *Aplysiella* Fischer, 1872 ?

* This means that the species *Aplysia dolabrifera* Rang is figured in the second section (section " b ") of Rang's genus *Aplysia.*

[16] Gray in 1857 (*Guide syst. Distr. Mollusca Brit. Mus.*) gave references to plates illustrating the species there enumerated. These plates, he explained in his " Preface," were published in Mrs. E. M. Gray's *Figures of Molluscan Animals.* The plates so cited for the three species placed by Gray in *Dolabrifera* Gray were pl. 149 fig. 1, pl. 149 fig. 3, and pl. 220 fig. 5 respectively. These plates were all published in 1850.

ON THE QUESTION WHETHER THE NAME *ACMAEA* ESCHSCHOLTZ, 1830 (CLASS GASTROPODA, ORDER ARCHAEOGASTROPODA) IS A HOMONYM OF *ACMEA* (= EMENDED FORM OF *ACME*) HARTMANN, 1821 (CLASS GASTROPODA, ORDER MESOGASTROPODA)

By Avery R. Test.[17]

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(Commission's reference Z.N.(S.)27.)

I have been very much troubled by a difficult taxonomic tangle, which has cropped up in the literature again and again. The evidence in the case is as follows :—

Acmaea Eschscholtz versus *Acmea* Hartmann

1821 Hartmann (*in* Sturm, *Deutsch. Fauna* (VI. Würm.) **5** : 37) described a terrestrial gastropod, now known as *Truncatella* Risso, 1826, *Hist. nat. princ. Prod. Eur. merid.* **4** : 124, naming it *Acme*.

Later, in the same year, he (Hartmann, 1821, *N. Alpina* **1** : 204) changed the name to *Acmea*.

The Greek root of this word assertedly is ἀκμή (see Willcox, M. A., 1900, *Proc. Boston Soc. nat. Hist.* **29** : 217–218, " A revision of the systematic names employed by writers on the morphology of the Acmaeidae ").

1830 Eschscholtz (*in* Kotzebue, O., 1830, *Reise* **2** (Appendix) : 350 " A new Voyage round the World ") briefly but sufficiently, in my opinion, described a genus of marine gastropod, naming it *Acmaea* (which has been called a *nomen nudum* by Sherborn, but, since the original description includes the chief generic character, I do not believe the name to be a *nomen nudum*).

1833 Eschscholtz's genus was again described, more thoroughly, and the derivation of the name given as from the Greek ἀκμαῖος. This publication occurred in the *Zoologischer Atlas*, by Eschscholtz, in a *Heft* edited by Rathke. It seems very likely that this was Eschscholtz's own derivation, however, since, in his original paper (1830, *op. cit.*) he compared the *Acmaea* to *Fissurella*, the keyhole limpet (hence " unfinished " limpet), and meant the name *Acmaea* in the sense of " completed " or " finished ". (See Eschscholtz, J. F., *Zoologischer Atlas*, Heft **5** : 16–17).

1845 Agassiz (Agassiz, L., *Nomenclatoris zoologici Index universalis* : 4) changes *Acmea* Hartmann to *Acmaea*, and calls *Acmaea* Eschscholtz a homonym, with no discussion.

1886 Watson (" Report on the Scaphopoda and Gasteropoda collected by H.M.S. ' Challenger '." *The Voyage of H.M.S. Challenger* (Zoology) **15** : 28) discussed the question and decided in favour of the use of the name *Acmaea* Eschscholtz.

1887 Bouvier (" Système nerveux, morphologie générale et classification des Gastéropodes Prosobranches ". *Ann. Sci. nat.*, Paris (7) **3** : 22), on the other hand, did not approve the use of the name *Acmaea* Eshscholtz, considering that its use could only result in confusion. To quote him : " En 1821, Hartmann désigna sous le nom d'*Acmea* un gastéropode terrestre et, en 1828, Eschscholtz donna le nom presque identique d'*Acmaea* aux gastéropodes qui nous occupent ici. Le nom choisi par Eschscholtz

[17] Formerly Avery R. Grant.

pouvant donner lieu à une confusion j'ai pensé qu'on devait conserver le terme d'*Acmea* pour les Gastéropodes terrestres et choisir pour nos Cyclobranches le nom de *Tectura* créé en 1830 par Audouin et Milne Edwards."

1900 Willcox (*Proc. Boston Soc. nat. Hist.* **29** : 217–218) says : " Bouvier, '87, p. 22, offers one argument unmentioned in either of these statements [referring to Dall's and Watson's discussions of this matter]—the great similarity between the names *Acmaea* and *Acmea*. The latter was proposed by Hartmann in 1821, but, according to Watson (*op. cit.*), was abandoned by him that same year. I have been unable to consult Hartmann's paper; but I am informed on excellent authority that his *Acmea* is derived from ἀκμή; *Acmaea*, on the other hand, comes from ἀκμαῖος (Rathke, '33, p. 16), and should therefore stand."

1915 Iredale (*Proc. malacol. Soc. Lond.* **11** : 330) says : " *Acmaea* Eschscholtz has been preferred to *Tectura*, and I note that this was long a source of discussion which was at last decided in favour of *Acmaea* on the score of priority. That there was a prior *Acmea* seems to have been ignored by all disputants, but such is a fact, which was on record all the time *Acmea* is a valid, molluscan name, and I think it quite impossible to maintain as well, in practical usage, *Acmaea*."

1926 Stewart (" Gabb's California fossil type Gastropods ". *Proc. Acad. nat. Sci. Philad.* **78** : 312) expressed the general feeling on the subject of these names when he said : " *Acmaea* Eschscholtz is not considered homonymous with *Acmea* Hartmann = *Acme* Hartmann."

1934 Winckworth (" Names of British Mollusca. II ". *J. Conch.* **20** : 11–12, apparently failing to note the recommendation included under Article 36) and the gist of *Opinion* 25, of the International Rules of Nomenclature, and ignoring previous discussions on the controversy regarding derivation of the names, says :—". . . it seems to me that, since *ae* and *e* are variants of the same letter in Latin, *Acmaea* 1833 is preoccupied by *Acmea* 1821; both names are presumably derived from ἀκμή, and Hartmann's genus of 1821 was emended to *Acmaea* by Agassiz. Unfortunately a loophole for argument is left, in that, while the point is settled for specific names in Article 35 of the International Rules, where it is laid down that ' specific names . . . shall be considered homonyms if they are distinguished from each other only by . . . the use of *ae, oe,* and *e, caeruleus, coeruleus, ceruleus* ', no similar statement is made for generic names.[18] Presumably the same ruling must be applied to genera, although not definitely stated, since the rejection of homonyms is governed by similar rules for genera and species (Arts. 34, 35). *Acmaea*, therefore, being no longer available for the limpet . . .".

Concerning these names, I should like to say that it is definitely certain that *Acmaea* Eschscholtz, 1830, *in* Kotzebue, *Reise* **2** App. : 350, has the right of priority over *Tectura* Gray, 1847, *Proc. zool. Soc. Lond.* **15** (178) : 158, and *Patelloida* Quoy and Gaimard, [1834], *in* d'Urville, *Voy.* " *Astrolabe* " (Zool.) **3** : 349 (= *Patelloidea* Courthouy, 1839, *Boston J. nat. Hist.* **2** (2) : 171). Consequently, these names do not enter into the question unless *Acmaea* Eschscholtz is to be considered a homonym or a *nomen nudum.*

[18] Since this passage was written, the deficiency here referred to has been made good by the International Commission's *Opinion* 147 (see 1943, *Opinions and Declarations rendered by the International Commission on Zoological Nomenclature* **2** : 123–132).

I do not believe it to be a *nomen nudum*, because the description accompanying the original publication appears ample. I quote it here, with the comment that the characters mentioned are sufficient to enable a member of the genus to be ascertained thereby. Eschscholtz (1830, *op. cit.*) wrote: ". . . there are found here [northwest coast of North America] six species of a genus which, from its simple, unwound shell, would be immediately taken for a *Patella*; the creature, however, closely resembles the *Fissurella*, with the difference that only one gill is visible in the fissure over the neck. It is remarkable that, on the whole northwest coast of America down to California, no *Patella*, only the animals of the genus *Acmaea*, were to be met with."

Further, after a study of the information contained in Article 36, and *Opinion* 25, of the International Rules, I do not believe that the name can be thrown out as a homonym, especially when the different derivations of the two names *Acmea* and *Acmaea* are considered.

. Lastly, I believe that most conchologists would deem it very ill-advised to throw out such a well-established name as *Acmaea* Eschscholtz, unless it is absolutely essential to do so. Almost the entire literature has been published under this generic name, and it will cause considerable confusion to throw it out.

However, the matter has been discussed so frequently over a long period of years, with such contradictory results, and has again cropped up so recently, that it seems advisable to get the matter definitely settled once and for all. To accomplish this, would it not be advisable to ask for a ruling on the question of *Acmaea* Eschscholtz versus *Acmea* Hartmann?

ON THE HOLOTYPE OF *AMMONITES CORDATUS* SOWERBY, 1813 (CLASS CEPHALOPODA, ORDER AMMONOIDEA)

By W. J. Arkell, D.Sc.
(*University Museum, Oxford.*)

Plate 2.

(Commission's reference Z.N.(S.)58.)

Great confusion arises from the inconsistency with which different authors adopt index fossils for zones in the Jurassic. Each zone has several current indices. In consequence the present applicant has been endeavouring to stabilise usage by advocating, and himself following, a rule of priority in zonal nomenclature on the lines of that accepted in zoological nomenclature. He does not advocate rigid adherence to priority when fresh confusion would be involved, but merely the choice, for any particular zone, of the oldest established zonal index, provided that it is appropriate. It seems that, if this procedure does not come to be adopted, there will be no end to the number of times a zone will be renamed by new authors, unaware of existing names or ignorant of their appropriateness, or dissatisfied with them for some local reason.

An application of this principle to the English Corallian Beds or Upper Oxfordian, in conjunction with a detailed study of the stratigraphy in the type locality, has been published by the present author (Arkell, 1936). A speaker in the discussion (: 187) of this paper remarked that the author " had restored the Corallian almost to its original simplicity, and had given good reasons for doing so ".

A similar treatment of the Oxford Clay (Lower Oxfordian and Upper Callovian Stages) has also been published (Arkell, 1939). There has been great confusion in the zonal nomenclature of these formations in recent years, especially during the inter-war period.

While the present paper has been in the press, the whole question of a code of rules for stratigraphical nomenclature has been taken in another place (Arkell, 1945). The subordination of stratigraphical nomenclature to zoological nomenclature makes such cases as this important, for a purely technical point in the International Code of Zoological Nomenclature concerning an index fossil of a zone can cause great confusion in stratigraphy.

The first author to introduce the word " zone " into geology was Alcide d'Orbigny, and at the same time he outlined a scheme of zones with indices, many of which have been used ever since (d'Orbigny, 1852). It seems highly desirable to standardise usage by adopting these zonal indices wherever practicable. One of d'Orbigny's indices proposed in the work referred to above was that of *Ammonites cordatus* Sowerby (J.), 1813, *Min. Conch. Great Brit.* **1** : 51. That name has been in continuous use as zonal index, for all, or a restricted part of, the zone for which it was originally proposed, down to the present day.

I append the following summary of the history of the zone of *Cardioceras cordatum* (Sowerby, 1813) (= *Ammonites cordatus* Sowerby, 1813).

D'Orbigny (1852) was soon followed by Hébert (1857, 1860), who adopted

the zone for the whole of the Paris Basin. Tombeck (1874), who was also one of the earlier writers to deal with Upper Jurassic zones, adopted the "*Cordatus* Zone" for the department of the Haute-Marne, using the term in its modern sense. Oppel, often (erroneously) claimed as the founder of the zonal idea, but certainly the greatest and most accurate of its early exponents, at first did not distinguish between the "*Lamberti*" and "*Cordatus*" zones, for in south-west Germany, where he principally worked, these zones are condensed and the fossils mixed. In his last work, however, Oppel (1866) took over these zones from his French colleagues. They had already been adopted for North Germany by Credner (1863), and the succession has not since been questioned.

H. Douvillé (1881), by his study of the Upper Jurassic on the north side of the Paris Basin and in the Normandy cliffs in particular, gave greater precision to the zonal sequence by establishing a "*Mariae* Zone" between the "*Cordatus*" and "*Lamberti*" zones. These three zones—*Lamberti, Mariae* and *Cordatus*—are the appropriate zones for the English Upper Oxford Clay also, and after a revision of English collections and a study of all the relevant English exposures and of the Norman collections in Paris and Caen, I have adopted these three zones with the three zonal indices established by H. Douvillé in 1881, both in the papers referred to above and in my monograph on the Ammonites of the English Corallian Beds, now in course of publication by the Palaeontological Society.

The arrangement proposed by H. Douvillé was followed by all subsequent French writers on the subject, of whom the most modern were his son R. Douvillé, who wrote a series of monographs on the fossils from these zones (1912, 1914, 1915), and Raspail (1901), who published the most detailed and authoritative stratigraphical account of the classic sections on the coast of Normandy.

Thus up to 1915, all French writers on the subject used a "*Cordatus* Zone", and its meaning was unambiguous and had never been questioned. It was the "Oolithe ferrugineuse" of the Normandy coast and of Neuvizy in the Ardennes—to cite two of the best known and most highly fossiliferous localities.

To trace the history of the zone all over Europe would take much space, but that the "*Cordatus* Zone" was used everywhere is shown by numerous works, of which perhaps the most important is Lahusen's monograph (1883) on the Ryasan fauna of Russia. Haug's great *Traité* (1908–1911) standardised the "*Cordatus* Zone", among other "zones classiques" for all Europe.

In England work comparable with that cited for France and certain other countries is only now being done. No monographs have been published on ammonites or faunas from the Oxfordian, except those recently completed, or now in progress, by the present writer. The "*Cordatus* Zone" was, however, used officially for the Upper Oxford Clay by the Geological Survey at least since 1895 (see Woodward (H. B.), 1895).

The "*Ammonites cordatus*" referred to as the characteristic fossil of the "*Cordatus* Zone" was not always the same species. D'Orbigny himself figured three different species under this name, and many geologists took d'Orbigny's figures as the standard rather than Sowerby's. But this is unimportant, in view of the fact that they are all contemporary species.

In his original description of *Ammonites cordatus*, Sowerby (1813) figured two specimens which he referred to this species. Those specimens were represented in figures 2 and 4 of Sowerby's plate 17. These figures are reproduced in facsimile on plate 2 in the present paper.

Fig. 1.

Fig. 2.

Facsimile reproductions of the figures given by Sowerby (J.), 1813, *Min. Conch. Great Brit.* **1** : plate 17 of the two co-types of *Ammonites cordatus* Sowerby, 1813.

FIG. 1.—Facsimile of fig. 2 on Sowerby's plate 17 (= the specimen selected as the holotype of *Ammonites cordatus* Sowerby, 1813, by Miss M. Healey in 1905).

FIG. 2.—Facsimile of fig. 4 on Sowerby's plate 17 (= the specimen which the International Commission on Zoological Nomenclature are now asked to designate as the holotype of *Ammonites cordatus* Sowerby, 1813, under their plenary powers).

Both Sowerby's specimens are preserved in the British Museum. The specimen represented in Sowerby's figure 2 is a nucleus only 20 mm. in diameter and not definitely identifiable; the specimen represented in Sowerby's figure 4, although also wholly septate (*i.e.* lacking the body-chamber) is easily identifiable and is well representative of a whole fauna of Cardiocerates characteristic of the top of the Oxford clay and the Wiltshire Lower Calcareous Grit (the "*Cordatus* Zone").

Unfortunately Miss M. Healey (1905), in a short note, chose the smaller figure (*i.e.* Sowerby's fig. 2) to be the "holotype" of *Ammonites cordatus* Sowerby. She pointed out that the smaller specimen did not come from the Oxford Clay but from the "Lower (?) Corallian". As I have shown (Arkell, 1936), its true horizon is the Upper Corallian, namely the "*Plicatilis* Zone".

Hence, if Miss Healey's type designation must be accepted, the name *Ammonites cordatus* Sowerby, 1813, must be used for an ammonite of the "*Plicatilis* Zone" or Upper Corallian, a species not known from the Oxford Clay, of which the original "*Cordatus* Zone" was part; and the "*Cordatus* Zone" of the literature of the last 80 years will have to be renamed.

Miss Healey's procedure, as is apparent from the references cited above, has been ignored by nearly all geologists and palaeontologists. In 1913, however, A. P. Pavlow, in a description (in Russian) of some fossils from northern Siberia collected on Baron Toll's polar expedition, gave the new name *Cardioceras subcordatum* Pavlow, 1913, *Mém. Acad. Sci. St. Pétersb.* (8) **21** (4) : 48, to the species figured by Sowerby as fig. 4 on his pl. 17. Seven years later S. S. Buckman, 1920, *Type Ammonites* : 15, not knowing of Pavlow's action, gave the name *Cardioceras cardia* nom. nov. to the same species. Buckman's trivial name "*cardia*" has been adopted for the "*Cordatus* Zone" by Dr. L. F. Spath, who advocates rejecting the name "*cordatus*" on the grounds of technical ineligibility in view of Miss Healey's type designation (Spath, 1943). Dr. Spath, however, rejected Pavlow's name "*subcordatum*" on the ground that its use might be "misleading". As I have pointed out, however (Arkell, 1941), *Cardioceras subcordatum* Pavlow, 1913, is technically the correct name for the species figured by Sowerby under the name *Ammonites cordatus* in fig. 4 of his pl. 17 (if Sowerby's fig. 2 of pl. 17 is taken as the type of *Ammonites cordatus* Sowerby), notwithstanding the existence of the species *Ammonites subcordatus* d'Orbigny, 1845, *in* Murchison, *Geol. Russia* **2** : 434 pl. 24 figs. 6, 7. This latter species is a Kimeridgian species of the genus *Amoeboceras* Hyatt, 1900, *in* Eastman-Zittel, *Text-Book Palaeont.* **1** : 580, and does not belong to, and was not first described in, the same genus as *Cardioceras subcordatum* Pavlow, 1913.

The following points should be noted :—

(1) Miss Healey's procedure, setting aside the "obvious" type specimen in favour of another, too small and badly preserved to be interpreted with certainty, runs counter to Recommendation "n" set out in Part III of Article 30 of the Rules.

(2) Miss Healey did no systematic work on ammonites. She merely refigured a few isolated type-specimens for *Palaeontologia Universalis*. Her work therefore does not carry the authority of a revision.

(3) Miss Healey's choice of figure 2 as the type of *Ammonites cordatus* Sowerby reversed the decision implicit in the works of the leading Jurassic stratigraphers and palaeontologists of several generations and countries, including d'Orbigny, Credner, Oppel, Hébert, Tombeck, H. B. Woodward, H. & R. Douvillé, Haug, Raspail, Lahusen, and de Grossouvre.

(4) Since the first submission of the present application to the International Commission, Sowerby's fig. 4 has again been quoted as the genotype of *Cardioceras* Neumayr & Uhlig, 1881, *Palaeontogr.* **27** : 140 (under the trivial name *cordatum* Sowerby) by

Professor F. Roman (1938) in his monumental *Ammonites jurassiques et crétacés* (: 228), which will be a standard work of reference for generations to come.

(5) The fact that the technically correct prior substitute name for Sowerby's fig. 4 is *Cardioceras subcordatum* Pavlow, 1913, means that the name *Cardioceras cardia* Buckman, 1920, and the term "*Cardia* Zone" adopted by Buckman and Spath will in any case have to be changed again. Spath's course, to continue to use the synonym *cardia* rather than risk the confusion involved in the second change, is no solution.

In view of this history, I make formal application for the setting aside of Miss Healey's type designation, as the type of *Ammonites cordatus* Sowerby, 1813, of the species figured by Sowerby as fig. 2 on pl. 17, and for the stabilisation of *Cardioceras cordatum* (Sowerby, 1813) as index of the "*Cordatus* Zone", with Sowerby's fig. 4 (pl. 17) as type. Only so can confusion and unnecessary changes in stratigraphical nomenclature be avoided, and a historical name be usefully retained.

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ON THE SCOPE OF THE PROPOSAL SUBMITTED TO THE INTERNATIONAL COMMISSION BY DR. W. J. ARKELL IN RELATION TO THE NAME *AMMONITES CORDATUS* SOWERBY, 1813 (CLASS CEPHALOPODA, ORDER AMMONOIDEA)

By Francis Hemming, C.M.G., C.B.E.

(*Secretary to the International Commission on Zoological Nomenclature.*)

(Commission's reference Z.N.(S.)58.)

The proposal now before the International Commission in relation to the name *Ammonites cordatus* Sowerby, 1813, is :—

(1) that the International Commission should :—

  (*a*) suppress the designation by Miss Healey (1905) of the species figured by Sowerby (1813) as fig. 2 on pl. 17 as the type of *Ammonites cordatus* Sowerby, 1813; and should

  (*b*) designate as the type of the above species the species figured by Sowerby (1813) as fig. 4 on pl. 17;

(2) that the International Commission should stabilise *Cardioceras cordatum* (Sowerby, 1813) as index of the stratigraphical zone known as the "*Cordatus* Zone", with Sowerby's fig. 4 as type.

Of the above proposals, proposal (1) would be within the power of the International Commission to grant if they were satisfied that the strict application of the rules as applied to this case would clearly result in greater confusion than uniformity; for in that case the International Commission would be enabled to use the plenary powers granted to them by the Ninth International Congress of Zoology at Monaco in 1913 for the purpose of suspending the rules as applied to this case.

The question whether proposal (1) is one which could properly be granted by the Commission depends, therefore, on whether the evidence so far brought forward, together with any additional evidence which may be brought forward during the consideration of this case, satisfies them that the strict application of the rules as applied to the present case would clearly result in greater confusion than uniformity. No limitation is imposed on the Commission as to the type of confusion of which account may be taken by them when considering in any given case whether they should make use of their plenary powers. It is, therefore, open to the Commission in such a case to take account not only of confusion in the taxonomic field but also (for example) of confusion in stratigraphical or other technical literature and confusion in textbooks and other standard works used in the teaching of zoology at the universities and elsewhere.

Proposal (2) relates to an entirely different matter; it is concerned not with a question of zoological nomenclature but with a question of palaeontological terminology. As such, proposal (2) is concerned with a matter which falls outside the scope of the International Code of Zoological Nomenclature and is, therefore, a matter with which, under their existing powers, the International Commission is not authorised to deal. If the discussion arising from the initiative taken by Dr. Arkell in his recent paper on the "Standard of the European Jurassic"[19] shows that there is a general desire on the part of palaeontologists that the nomenclature of stratigraphical zones should be brought under regulation, the International Commission will be glad to co-operate in the formulation of any such scheme, in so far as it raises, or impinges upon, questions relating to the nomenclature of the index fossils of such zones.

[19] Arkell, 1946, *Bull. Amer. geol. Soc.* **57**: 1–34.

PROPOSED SUSPENSION OF THE *RÈGLES* FOR *ACTINOTE* HÜBNER, [1819] (CLASS INSECTA, ORDER LEPIDOPTERA)

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and

N. D. Riley.

(*Keeper of the Department of Entomology, British Museum (Natural History).*)

(Commission's reference Z.N.(S.)63.)

Hübner ([1819], *Verz. bekannt. Schmett* (2) : 27) founded the genus *Actinote* Hübner for four species which he cited as follows :—

208. *Actinote Thalia* Linn. Syst. Pep. [*sic*] 67. Cram. 246. A.
210. *A. Epaea* Cram. 230. B.C.
211. *A. Eurita* Cram. 233. A.B.
212. *A. Amesis* Cram. 104. F.

Scudder (1875, *Proc. Acad. Arts Sci., Boston* **10 :** 102) designated the third of these species, *Papilio eurita* Cramer, as the type. Accordingly, it is necessary to determine the identity of the species so named by Cramer. An examination both of Cramer's published plate and of the original drawings for that plate now in the British Museum (Natural History) show that Cramer figured two species under this name. Figure A on plate 233, which Cramer regarded as representing the ♂ of *Papilio eurita*, in fact represents a specimen of *Bematistes umbra* (Drury), ♀-form *fasciata* (Auriv.).* Figure B on the same plate, which Cramer regarded as representing the ♀ of *Papilio eurita* in fact represents a ♀ of *Bemastistes macaria* (Fabricius).*

It is clear from the text given by Cramer (1779, *Uitl. Kapellen* **3** (20) : 69, 70) that he did not regard himself as the author of the name *Papilio eurita*, for on the top of page 70 at the end of his account of this species he added the reference " Linn. Syst. Nat. pag. 757. n. 69. Pap. Helicon. Clerck, icon. Tab. 31 Fig. 7.8." This is the species first described as *Papilio eurytus* by Linnaeus in 1758 (*Syst. Nat.* ed. **10 :** 487 no. 180), which is the species known to-day as *Pseudacraea eurytus* (Linnaeus).

The position is, therefore, that *Actinote* Hübner is a genus, of which the species selected as the type by a later author (Scudder, 1875) is a species which was erroneously determined by the author of the genus (Hübner), for what Hübner intended to include in the genus as species no. 211 was a species of the genus *Bematistes* Hemming figured by Cramer on plate 233 (though he did not realise that, in fact, Cramer had figured two different species of that genus as Figs. A and B respectively on that plate). Hübner referred the species figured by Cramer to *Papilio eurytus* Linnaeus, 1758, because Cramer had done so and he did not realise that Cramer had made a mistake of identification; Hübner certainly had no intention of including under the name *Actinote euryta* (Cramer) the species of the genus *Pseudacraea* Westwood, [1850], to which in fact Linnaeus had given the name *Papilio eurytus* in 1758.

* Until recently these species were always referred to the genus *Planema* Doubleday. Hemming has shown (1935, *Trans. R. ent. Soc. Lond.* **83 :** 435) that this use of the name is invalid and has proposed the name *Bematistes* Hemming (*loc. cit.* **83 :** 374) for these species.

The genus *Actinote* Hübner is, therefore, a genus based upon an erroneously determined species: first, because Cramer confused together two species (of the genus *Bematistes* Hemming), and, second, because he confused his composite *Bematistes* species with the *Pseudacraea* species which in 1758 Linnaeus had named *Papilio eurytus*.

The status of genera based upon erroneously determined species has been dealt with by the International Commission on Zoological Nomenclature in *Opinion* 65 (published in 1914); and the decision there laid down has since been elaborated by the Commission by the further decisions taken at Lisbon in 1935 and now embodied in *Opinion* 168. Under those decisions, it is necessary to assume that the species designated as the type of a genus is correctly identified by the original author of the genus and, where the type is designated by a later author, both by that author and by the original author, when including the species in question in the genus concerned. The Commission have, however, made it clear that, where in the opinion of specialists in the group concerned any of the foregoing assumptions is at variance with the facts, the case should be submitted to the International Commission for decision.

Under the foregoing decisions of the International Commission, it is necessary therefore to conclude that the type of the genus *Actinote* Hübner is *Papilio eurytus* Linnaeus, 1758. In other words *Pseudacraea* Westwood ([1850], *in* Doubleday, *Gen. diurn. Lep.* (2) : 281) to which *Papilio eurytus* Linn. has hitherto been assigned, is a synonym of *Actinote* Hübner.

The position is, therefore, that if the rules were strictly applied in this case, the name *Actinote* Hübner, which has till now been used for a genus of the subfamily ACRAEINAE, would be transferred from that subfamily to the subfamily NYMPHALINAE, and would replace the name *Pseudacraea* Westwood, the species of which mimic those of the genus *Acraea* Fabricius, the leading genus in the subfamily ACRAEINAE. It is hardly possible to imagine a case in which the strict application of the rules could lead to greater confusion than would arise if the name *Actinote* Hübner were transferred in this way.

All these difficulties could be avoided if the International Commission on Zoological Nomenclature were to cancel Scudder's designation of *Papilio eurita* Cramer as the type of *Actinote* Hübner, and were to declare its type to be *Papilio thalia* Linn., 1758, which is the first of the four species placed in this genus by Hübner, and which has ever since been assigned to that genus.

We accordingly recommend to the International Commission :—

(*a*) that in virtue of the plenary powers conferred upon them by the International Zoological Congress, they should suspend the *Règles* in the case of the generic name *Actinote* Hübner, [1819];

(*b*) that they should cancel the designation by Scudder in 1875 of *Papilio eurita* Cramer, [1779], (recte *Papilio eurytus* Linn., 1758) as the type of *Actinote* Hübner, [1819];

(*c*) that they should declare the type of *Actinote* Hübner, [1819] to be *Papilio thalia* Linnaeus, 1758 (*Syst. Nat* (ed. 10) **1** : 467); and

(*d*) that they should add *Actinote* Hübner, [1819] with the type designated in (*c*) above, to the *Official List of Generic Names in Zoology.*

PROPOSED SUSPENSION OF THE *RÈGLES* FOR *HEMEROBIUS* LINNAEUS, 1758, AND *CHRYSOPA* LEACH, 1815 (CLASS INSECTA, ORDER NEUROPTERA)

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(Commission's reference Z.N.(S.)42.)

In the case of the two following generic names, the strict application of the rules embodied in the International Code of Zoological Nomenclature would cause a very serious, and quite unnecessary, disturbance in existing practice and would, in our view, cause greater confusion than uniformity. For these names we are, therefore, in favour of a partial suspension of the rules. In each case, the object that we have in view can be effected by a very slight departure from the strict application of the Code.

The following is an extract from the paper prepared by Mr. Killington :—

Hemerobius Linnaeus

Linnaeus, 1758, *Syst. Nat.* (ed. 10) **1** : 549.
Linnaeus, 1761, *Faun. svec.* : 383.
Latreille, 1810, *Consid. gén. Anim. Crust. Arach. Ins.* : 435.
Leach, 1815, Brewster's *Edinb. Encycl.* **9** (1) : 138.
Curtis, 1828, *Brit. Ent.* **4** : text to pl. 202.
Westwood, 1838, *Introd. class. Ins.* **2** Syn. : 48.
Rambur, 1842, *Hist. nat. Ins., Névropt.* : 420.
Banks, 1906, *Trans. Amer. ent. Soc.* **32** : 29.
Killington, 1931, *Entomologist*, **64** : 112.

Type (fixed by Banks) = *Hemerobius humuli* Linnaeus, 1761 (= *Hemerobius humulinus* Linnaeus, 1758).

Latreille (1810) fixed the type of this genus as *Hemerobius perla* Linnaeus, which was one of the original species described by Linnaeus in 1758 and therefore a perfectly valid selection. In 1828, Curtis cited *Hemerobius hirtus* Linnaeus, 1761, as the genotype, but apart from the fact that Latreille had already fixed *Hemerobius perla* as the genotype, Curtis's selection could not stand as *Hemerobius hirtus* was not included among the original species in the Linnaean genus. Westwood, 1838, also cited *Hemerobius hirtus* Linn. The next author to fix a genotype was Banks, who in 1906 selected *Hemerobius humuli* Linnaeus, 1761, which has been shown by Killington (1931) to be a synonym of *Hemerobius humulinus* Linnaeus (the later spelling was probably due to a printer's error). This selection would be valid, were it not for Latreille's action in 1810 in selecting *Hemerobius perla* Linnaeus.

It is unfortunate that for over a century *Hemerobius perla* Linn. has been generally recognised as representing the genus *Chrysopa* Leach (family CHRYSOPIDAE) and *Hemerobius humulinus* the genus *Hemerobius* Linnaeus (family HEMEROBIIDAE), for in 1815, apparently unaware of Latreille's action, Leach raised the genus *Chrysopa* for *Hemerobius perla* (and for *Chrysopa reticulata*, although the latter name was not accompanied by a description, and is, in any case, a synonym of *H. perla*), and the two genera *Hemerobius* and *Chrysopa* became the typical genera, respectively, of the families HEMEROBIIDAE and CHRYSOPIDAE. With very few exceptions Neuropterists have, since 1815, accepted *Hemerobius perla* as the genotype of *Chrysopa*.

Thus it will be seen that if recognition be accorded to Latreille's fixation of *Hemerobius perla* Linnaeus, as the genotype of *Hemerobius* (i.e. if strict adherence to the International Code of Zoological Nomenclature be enforced), not only will the name *Chrysopa*, so long applied to a section of the green lacewings, have to sink as a synonym to *Hemerobius*, but the family name HEMEROBIIDAE will have to be transferred from the brown lacewing group to take the place of the name CHRYSOPIDAE. Such a change would now be highly undesirable for the following reasons :—

(1)—the long and universal usage of Leach's division of the two groups;
(2)—the two families contain together more species than any other two families of Neuroptera;
(3)—both families are practically world-wide in distribution and the literature dealing with them is far more extensive than in the case of the other families;
(4)—both families are of great economic importance, and an important change in the nomenclature would result in confusion not only to Neuropterists, but also to economic entomologists;
(5)—many compound names have been based on the names *Hemerobius* and *Chrysopa*, and, where valid, these would have to remain, with their perpetual and misleading suggestions of non-existent affinities.

For the reasons given above I consider that the strict application to *Hemerobius* Linnaeus of the rules laid down in the International Code of Zoological Nomenclature would produce a state of confusion which the International Zoological Congress intended to avoid when they empowered the International Commission on Zoological Nomenclature to suspend the rules in cases where their strict application would clearly result in greater confusion than uniformity.[20]

We are in full agreement both with Dr. Killington's conclusions and with his recommendations, which we summarise as follows :—

(a) THE GENERIC NAME *HEMEROBIUS* LINNAEUS, 1758.

We are of opinion that it would be highly undesirable to disturb the use of the name *Hemerobius* Linnaeus, 1758, *Syst. Nat.* (ed. 10) **1** : 549, for *Hemerobius humulinus* Linnaeus, 1758, and its congeners, having regard to the fact :—

(i) that that name has been applied (with one exception : the genus *Mucropalpus* Rambur, 1842, contained *Hemerobius humulinus* Linnaeus (under the name *M. lutescens* Fabricius)) to species congeneric with *Hemerobius humulinus* since 1758;
(ii) that the strict application of the rules would transfer the name *Hemerobius* Linnaeus to *Hemerobius perla* Linnaeus, thus displacing the name *Chrysopa* Leach, 1815, which has been almost universally applied to that species for over a century;
(iii) that the strict application of the rules would transfer the name HEMEROBIIDAE from the world-wide and numerous group of species now universally grouped under that name to another

[20] The above is an extract from the Second Report of the Sub-Committee on Neuropteroid Groups of the Committee on Generic Nomenclature of the Royal Entomological Society of London. At that time the above Committee was composed of :—Sir Guy Marshall, K.C.M.G., F.R.S. (*Chairman*), Dr. K. G. Blair, Dr. F. W. Edwards, Mr. Francis Hemming, C.M.G., C.B.E., Dr. O. W. Richards, Mr. N. D. Riley, and Professor W. A. F. Balfour-Browne (*Hon. Secretary*). The Sub-Committee's Report was attached to the Fourth Report of the Committee on Generic Nomenclature, which, on 24th February 1937, was submitted by the Committee to the Council of the Royal Entomological Society of London, with a recommendation that this case should be forwarded to the International Commission on Zoological Nomenclature for favourable consideration. The Committee's recommendation was approved by the Council of the Society and, on the publication, on 30th June 1937, of the Committee's Fourth Report, the recommendation regarding this case was forwarded to the International Commission by the Council of the Society.

world-wide and numerous group of species known universally as the CHRYSOPIDAE.

The fixation of *Hemerobius humulinus* Linnaeus, by Banks (1906, *Trans. Amer. ent. Soc.* **32** : 29) as the type of *Hemerobius* would be valid but for the fact :—

(i) that Latreille (1810, *Consid. gén. Anim. Crust. Arach. Ins.* : 435) cited *Hemerobius perla* Linn. as the type; and
(ii) that the International Commission on Zoological Nomenclature had expressed the view in *Opinion* 11 that Latreille's " table des genres avec l'indication de l'espèce qui leur sert de type " " should be accepted as designation of types of the genera in question ".

We are of opinion that it is highly desirable that in the exercise of the plenary power conferred upon them by the International Zoological Congress, the International Commission on Zoological Nomenclature should as soon as possible take the steps laid down by the Congress for the promulgation of an *Opinion* to the following effect :—

Opinion 11 of the International Commission on Zoological Nomenclature regarding the designation of genotypes by Latreille, 1810, shall not be interpreted to mean that in the work referred to in that *Opinion* Latreille designated *Hemerobius perla* Linnaeus, 1758, as the type of the genus *Hemerobius* Linnaeus. Consequently the fixation by Banks in 1906 of *Hemerobius humulinus* Linnaeus, 1758, as the type of that genus is valid, and the name *Hemerobius* Linnaeus as thus defined is hereby added to the *Official List of Generic Names in Zoology*.

(b) THE GENERIC NAME *CHRYSOPA* LEACH, 1815.

We are of opinion that it would be highly undesirable to disturb the use of the name *Chrysopa* Leach, 1815, for *Hemerobius perla* Linnaeus, 1758, Brewster's *Edinb. Encycl.* **9** (1) : 138, and its congeners, having regard to the fact :—

(i) that that name has been almost universally applied to those species since its establishment by Leach in 1815;
(ii) that the strict application of the rules would involve not only the transfer of the name *Hemerobius* Linnaeus, 1758, to the species almost universally placed under *Chrysopa* since the establishment of the latter genus by Leach in 1815, but would also involve the transfer of the name HEMEROBIIDAE from the world-wide and numerous group of species now universally grouped under that name to the world-wide and numerous group of species known universally as the CHRYSOPIDAE.

Hemerobius perla Linnaeus, 1758, the only valid species cited by Leach, 1815, in his original description of the genus *Chrysopa*, could be recognised as the genotype of *Chrysopa* but for the fact :—

(i) that Latreille (1810, *Consid. gén. Anim. Crust. Arach. Ins.* : 435) cited *Hemerobius perla* Linnaeus as the type of *Hemerobius* Linnaeus, 1758, and that if this fixation be accepted *Chrysopa* becomes a synonym of *Hemerobius*; and
(ii) that the International Commission on Zoological Nomenclature had expressed the view in *Opinion* 11 that Latreille's " table

des genres avec l'indication de l'espèce qui leur sert de type" "should be accepted as designation of types of the genera in question".

We are of opinion that it is highly desirable that in the exercise of the plenary power conferred upon them by the International Zoological Congress, the International Commission on Zoological Nomenclature should as soon as possible take the steps laid down by the Congress for the promulgation of an *Opinion* to the following effect :—

The name *Chrysopa* Leach, 1815 (type *Hemerobius perla* Linnaeus, 1758) is hereby added to the *Official List of Generic Names*. The name *Hemerobius* Linnaeus, 1758, is, therefore, not to be substituted for *Chrysopa* Leach, 1815, on the ground that it has priority over that name, though it is available for *Hemerobius humulinus* Linnaeus, 1758.

ON THE QUESTION WHETHER *ACARUS ALATUS* HERMANN, 1804, IS INVALIDATED BY *ACARUS ALATUS* SCHRANK, 1803, AN UNRECOGNISABLE SPECIES (CLASS ARACHNIDA, ORDER ACARINA)

By the late Arthur P. Jacot.

(Commission's reference Z.N.(S.)131.)

Acarus alatus Schrank, 1803, *Fauna boic.* **3** : 214, is an unrecognisable species, *i.e.* potentially a *nomen nudum*. *Acarus alatus* Hermann, 1804, *Mem. apt.* : 92 pl. 4 fig. 6, is a recognisable species. Is the latter a usable name or a homonym? That is to say, does a trivial name applied to an unrecognisable species or a *nomen nudum* make the same trivial name invalid for subsequent use, if published in combination with the same generic name?

PROPOSED SUSPENSION OF THE *RÈGLES* FOR *PALAEANEILO* HALL (J.), 1869 (CLASS PELECYPODA, ORDER PROTOBRANCHIA)

By L. R. Cox, Sc.D.

(Assistant Keeper in the Department of Geology, British Museum (Natural History).)

(Commission's reference Z.N.(S.)62.)

I beg to submit the following application to the International Commission on Zoological Nomenclature :—That Rule 19 be suspended in the case of the generic name *Palaeaneilo* J. Hall, 1869, *Prelim. Not. Lamellibr. Shells*, Pt. 2 and that the emended name *Palaeoneilo* be placed on the *Official List of Generic Names in Zoology.*

The genus " *Palaeaneilo* " was founded by J. Hall in 1869 in a pamphlet entitled " Preliminary Notice of the Lamellibranchiate Shells of the Upper Helderberg, Hamilton and Chemung Groups, with others from the Waverly Sandstones, Part 2 ", distributed by the New York State Cabinet of Natural History. The generic name was intended to suggest that the genus was ancestral to the living genus *Neilo* Adams, [1854], *Proc. zool. Soc. Lond.* **20** (243) : 93, but is spelt as above throughout Hall's paper, occurring no fewer than fifteen times.

A further species belonging to the genus was described in 1873 in a paper by J. Hall and R. P. Whitfield (*23rd Ann. Rep. N.Y. State Cabinet* : 241) in which the emended name *Palaeoneilo* is introduced without comment. This emended form is used in all subsequent papers by Hall, and has been adopted by all subsequent authors, few of whom, probably, have been able to consult the rare pamphlet in which the genus was first described.

Palaeoneilo Hall is an important genus of Palaeozoic Lamellibranchia found in most parts of the world and much cited in the literature. The original form of the word, *Palaeaneilo*, cannot, however, be rejected as a *lapsus calami*, typographical error, or error of transcription, and so, by Article 19 of the International Rules, should be accepted as the valid name for this genus. I consider that this course would be most undesirable, both on etymological grounds, and because unnecessary confusion would result. It would therefore, in my opinion, be preferable for the International Commission to decide upon the official stabilisation of the form " *Palaeoneilo* ".

The type of this genus is *Nuculites constricta* Conrad (T. A.), 1842, *J. Acad. nat. Sci. Philad.* **8** : 249, pl. 15 fig. 8, that species having been so designated by Hall (J.), 1885, *Nat. Hist. New York* (Palaeontology) **5** (1) Lamellibranchiata **2**: xxvii. I recommend that the generic name *Palaeoneilo* (emended from *Palaeaneilo*) Hall, 1869, with the above species as type be added to the *Official List of Generic Names in Zoology.*

(*continued from front wrapper*)

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Proposed suspension of the *Règles* for *Hemerobius* Linnaeus, 1758, and *Chrysopa* Leach, 1815 (Class Insecta, Order Neuroptera). By John Cowley, M.A., *Bridgwater, Somerset*, F. J. Killington, D.Sc., *Parkstone, Dorset*, D. E. Kimmins, *Department of Entomology, British Museum (Natural History)* and C. E. Longfield, *Department of Entomology, British Museum (Natural History)* . . . . p. 188

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OPINIONS AND DECLARATIONS RENDERED BY THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

The above work, which is obtainable from the International Commission on Zoological Nomenclature) at its Publications Office, 41, Queen's Gate, London, S.W. 7, is being published in three volumes concurrently, as follows:—

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PRINTED IN GREAT BRITAIN BY RICHARD CLAY AND COMPANY, LTD.,
BUNGAY, SUFFOLK.